

TAS2R16 (Bitter Taste/ Longevity)

Gene Report

REPORT CATEGORIES —



NUTRITION



LONGEVITY

Sample Client

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DISCLAIMER

This report does not diagnose this or any other health conditions. Please talk to a healthcare professional if this condition runs in your family, you think you might have this condition, or you have any concerns about your results.

Personal information

NAME

Sample Client

SEX AT BIRTH

Male

HEIGHT

5ft 5" 165cm

WEIGHT

137lb 62kg



How this works

Our Wellness Reports analyze how your DNA influences your health.
We then use this analysis to give you personalized risk estimates and recommendations.



Similarly, our Trait Reports look at how your DNA influences your traits.



Your DNA is like an instruction manual — it contains a lot of information.
You can think of it as a blueprint for your body.

Genetic variants are parts of DNA that differ from person to person. Some can make you more vulnerable to certain health issues, while others may influence traits such as eye color.



We use artificial intelligence and machine learning to analyze all this information.
We then summarize your results as a risk score or display it on a gauge.

In total, we analyze up to 83 million genetic variants.

When we give a risk score, the risk icon tells you if you are at a higher or lower risk compared to other people:



Genotype color info:

AA

You don't have any risk alleles

AA

You have 1 risk allele

AA

You have 2 risk alleles

Your risk is also displayed as a percentile. This will tell you how your risks compare to our sample population. The lower your percentile number, the lower your risk. The "50th percentile" would be an average risk.

Similarly, the gauge tells you your relative risk score compared to our sample population, or it indicates a specific trait or haplotype you are more likely to have based on your genetic variants.

When applicable, we also list top evidence-based recommendations that may help lower your risk. The focus is on recommendations that may be of benefit to you, based on your genetics.

Our recommendations come in four categories: lifestyle, diet, supplements and drugs.
The following icons tell you which category a recommendation falls into:



Our team of scientists also ranks each recommendation.
We rank based on impact and the strength of evidence in the medical literature.

Impact shows how strongly a recommendation will affect your health in a certain area.
Evidence is how much scientific support there is for the recommendation. Rankings are from 1 to 5 (low to high):



Impact

Impact scores range from 1-5. These scores reflect how much of an effect each recommendation can have. An impact score of 5 predicts the biggest effect.

When a recommendation affects something we can measure, we use those measurements to assign the impact score. For example, a recommendation that decreases cholesterol by 20% will have a higher impact score than one that decreases it by 5%.

Some recommendations affect things that we cannot directly measure, like stress or mood. For these, the impact score is based on how well they work relative to other recommendations and standard treatments. The best ones get the highest scores.

If there is a lot of research that shows a recommendation works especially well for your genotype, the impact score gets increased.

Recommendation Evidence

- 5 / 5
- Recommendations that are considered effective and generally recommended by experts and medical bodies.
-
- 4 / 5
- Recommendations that are considered likely effective and that have multiple independent meta-analyses and a great many studies supporting them.
-
- 3 / 5
- Recommendations that are considered possibly effective and have many studies supporting them
-
- 2 / 5
- Recommendations that have insufficient evidence, with two or several clinical trials supporting them, or many studies but with ambiguous results.
-
- 1 / 5
- Recommendations that have insufficient evidence, with a single clinical trial, or with many studies most of which didn't find support for the recommendation.
-
- 0 / 5
- No evidence in humans.

Genotype-specific Evidence

- High-quality
- Direct evidence that a recommendation helps more in people with your gene variant (many clinical trials, a few large clinical trials, or a meta-analysis).
- Medium-quality
- Direct evidence that a recommendation helps more in people with your gene variant (a few clinical trials or one large clinical trial).
- Low-quality
- Direct evidence that a recommendation helps more in people with your gene variant (a single clinical trial or more trials with inconsistent results).
- Indirect
- A recommendation may help more in people with your gene variant because it targets a specific gene or protein affected by your variant (e.g., MTHFR, dopamine).
- In theory
- A recommendation may help more in people with your gene variant because it targets a specific mechanism affected by your variant (e.g., inflammation, oxidative stress).

Some things to keep in mind:

- Genetics doesn’t play a considerable role in a condition or a trait.
- There is not enough research available to estimate a genetic predisposition.
- There are technical limitations to estimating or presenting a genetic predisposition.
- The topic is sensitive, and a genetic predisposition should only be estimated and presented by a healthcare professional.

Introduction

[TAS2R16](#) is one of dozens of genes that may affect your perception of taste. More specifically, it can make a person more or less sensitive to bitter flavors and foods like [grapefruit](#) and wine [\[R\]](#), [\[R\]](#).

Many bitter compounds can be harmful to our health if we consume them; some researchers believe that we evolved to recognize (and avoid) these substances through taste [\[R\]](#).

Unfortunately, many plants that are good for us also taste bitter. These include healthy vegetables like broccoli and beneficial plants like [dandelion](#). Overly sensitive bitter taste receptors might have helped our ancestors avoid poison, but in the modern day, they may make us less likely to enjoy healthy foods [\[R\]](#), [\[R\]](#).

TAS2R16 may also affect your perception and enjoyment of wine. According to one study, people with certain variants in this gene were more likely to perceive red wine as tasting sour [\[R\]](#).

TAS2R16

Genetics and Bitter Taste Perception

Some researchers have suggested that people with highly sensitive bitter taste receptors may not consume as many bitter foods—including healthy vegetables like broccoli [\[R\]](#), [\[R\]](#), [\[R\]](#).

Some people think broccoli and Brussels sprouts taste good, while others can’t see past their bitter qualities. But avoiding vegetables may have consequences: people who regularly eat cruciferous vegetables live, on average, longer lives than those who don’t [\[R\]](#).

Certain variants of *TAS2R16* may improve the subjective taste of cruciferous vegetables and other bitter foods. People with these alleles may be naturally inclined to seek out and eat more of these foods and, thus, pursue a healthier diet. These include [\[R\]](#):

- ‘C’ at [rs6466849](#)
- ‘C’ at [rs860170](#)
- ‘T’ at [rs978739](#)

One especially strange possible link between *TAS2R16*, taste, and longevity crops up at rs6466849. People with the ‘C’ allele here are both more likely to live longer and less likely to think red wine tastes sour (using vinegar as a point of comparison) [\[R\]](#), [\[R\]](#).



TYPICAL ACTIVITY

Likely typical TAS2R16 activity based on 3 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
TAS2R16	rs860170	TT
TAS2R16	rs6466849	CT
TAS2R16	rs978739	TC

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

Your Recommendations

Your recommendations are prioritized according to the likelihood of it having an impact for you based on your genetics, along with the amount of scientific evidence supporting the recommendation.

You'll likely find common healthy recommendations at the top of the list because they are often the most impactful and most researched.

DOSAGE		DOSAGE	
1	Vegetables	2	Cruciferous Vegetables
3	Sulforaphane	4	Resveratrol
	30 mg		150 mg

1



Vegetables

IMPACT

4 / 5

EVIDENCE

3 / 5

How to implement

Incorporate at least 2-3 cups of various vegetables into your daily diet, ensuring a mix of colors like greens, reds, and yellows to maximize nutrient intake. Aim to include vegetables in most meals, either as a side, part of the main dish, or snacks.

Description

Vegetables are edible parts of plants that offer various health benefits due to their rich nutrient content, including vitamins, minerals, fiber, and antioxidants. They are essential components of a balanced diet and contribute to overall health, supporting various bodily functions.

How it helps

The first — and possibly the most important — strategy to prevent any detrimental TAS2R16 alleles from shortening your life is to eat healthy vegetables, even if they taste bad to you. Vegetable-rich diets are strongly linked to longer, healthier lives; they contain essential nutrients, beneficial polyphenols, and antioxidants that can improve your health [\[R\]](#).

Some of the beneficial vegetables (and other foods) you may enjoy less if you are sensitive to bitter tastes include [\[R\]](#), [\[R\]](#):

- Cabbage
- Spinach
- Lettuce
- Broccoli and other cruciferous vegetables
- [Saffron](#)
- Tea
- Red wine

According to several studies, the most effective way to increase your tolerance of bitter foods is to increase your exposure to them [\[R\]](#). Many creative recipes use spices and different cooking techniques to mask or transform unpleasant flavors. Try roasting those Brussels sprouts in garlic or spicing up your broccoli with chili flakes. Your health is worth it!

2



Cruciferous Vegetables

IMPACT

3 / 5

EVIDENCE

2 / 5

How to implement

Incorporate a serving of cruciferous vegetables, such as broccoli, cauliflower, Brussels sprouts, kale, or cabbage, into at least one meal each day. A serving size is about a half cup cooked or one cup raw. Try to maintain this habit consistently over time for the best health outcomes.

Description

Cruciferous vegetables like broccoli, cauliflower, and kale are rich in vitamins, fiber, and antioxidants. Including them in your diet can promote overall health and may offer cancer-protective properties.

Cruciferous vegetables are a group of vegetables that belong to the Brassicaceae family. They are rich in fiber, vitamins, minerals, and other nutrients.

Some common cruciferous vegetables include broccoli, cauliflower, cabbage, kale, and brussels sprouts.

How it helps

The first — and possibly the most important — strategy to prevent any detrimental TAS2R16 alleles from shortening your life is to eat healthy vegetables, even if they taste bad to you [\[R\]](#).

Consuming fruits and vegetables is linked to a lower risk of cardiovascular diseases, including coronary heart disease and stroke, as well as reduced mortality from these conditions. Cruciferous vegetables offer greater benefits [\[R\]](#).

3

Sulforaphane

IMPACT

1 / 5

EVIDENCE

0 / 5

How to implement

Take a sulforaphane supplement, typically available in capsule form, with a dosage ranging from 30 to 60 milligrams per day. It is generally taken once daily, with or without food, according to the product's label instructions or a healthcare provider's advice. Continue this regimen daily for as long as you seek its benefits, but consult a healthcare provider for long-term use guidance.

TYPICAL STARTING DOSE

30 mg

Description

Sulforaphane is a natural compound found in cruciferous vegetables like broccoli and cauliflower. It is known for its potent antioxidant and anti-inflammatory properties, potentially offering protective effects against chronic diseases and promoting overall health.

How it helps

If you can't stand vegetables because they taste bitter, you might not consume as many beneficial polyphenols as someone who enjoys those same vegetables.

[Sulforaphane](#) is a polyphenol found in broccoli and other cruciferous vegetables. It hasn't been directly linked to increased lifespan, but several studies have produced promising results for increasing healthspan [[R](#), [R](#), [R](#), [R](#), [R](#)].

In various animal studies, sulforaphane has been tentatively linked to lower rates of cancer, improved antioxidant defense, lower [cholesterol](#), reduced blood pressure, and even lower rates of type 2 diabetes. If these results can be reproduced in human patients, they imply that sulforaphane may increase how long a person remains healthy during their life—that is, their healthspan [[R](#), [R](#), [R](#), [R](#), [R](#)].

How to implement

TYPICAL STARTING DOSE

150 mg

Description

Resveratrol is an antioxidant found mainly in [R]:

- Berries
- Red grapes
- Red wine
- Peanuts

It's purported to have anti-inflammatory and antioxidant effects [R, R, R].

How it helps

If you can't stand vegetables because they taste bitter, you might not consume as many beneficial polyphenols as someone who enjoys those same vegetables.

Abundant in red grapes and red wine, resveratrol may improve antioxidant defense and activate [SIRT1](#), a well-studied gene associated with longevity [R, R].

Note, however, that resveratrol is a controversial longevity supplement with insufficient evidence of directly increasing lifespan. Talk to your doctor before adding new supplements to your daily routine.